

Claims:

1. Overvoltage protection means, having a first electrode (1), having a second electrode (2), having a breakdown spark gap which has been formed between the two electrodes (1, 2), and having a housing (3) which holds the electrodes (1, 2), when the breakdown spark gap is ignited an arc (4) forming between the two electrodes (1, 2) within a discharge space (5) which connects the two electrodes (1, 2), characterized in that the discharge space (5) is made such that it runs at least partially transversely and/or opposite the direction of the electrical field of the prevailing line voltage so that the distance to be overcome by the arc (4) between the two electrodes (1, 2) has a transverse component to the electrical field E.

2. Overvoltage protection means as claimed in claim 1, wherein the discharge space (5) has at least three regions (7, 8, 9), the first region (7) being connected to the first electrode (1), the second region (8) being connected to the second electrode (2) and the third region (9) being connected on the one hand to the first region (7) and on the other hand to the second region (8).

3. Overvoltage protection means as claimed in claim 2, wherein the third region (9) runs essentially perpendicularly to the direction of the electrical field of the prevailing line voltage.

4. Overvoltage protection means as claimed in claim 2, wherein the third region (9) runs partially obliquely to the direction of the electric field of the prevailing line voltage.

5. Overvoltage protection means as claimed in claim 2, wherein the third region (9) runs partially opposite the direction of the electric field of the prevailing line voltage.

6. Overvoltage protection means as claimed in one of claims 1 to 5, wherein the side (10) of the first electrode (1) facing the second electrode (2) and the side (11) of the second electrode (2) facing the first electrode (1) are partially covered with an insulating or high-resistance material (12, 13), the region (14) of the first electrode (1) not covered with the insulating or high-resistance material (12) and the region (15) of the second electrode (2) not covered with the insulating or high-resistance material (13) being arranged offset to one another.

7. Overvoltage protection means as claimed in one of claims 1 to 5, wherein the side (10) of the first electrode (1) facing the second electrode (2) and the side (11) of the second electrode (2) facing the first electrode (1) are partially covered with an insulating material (12, 13), the region (14) of the first electrode (1) not covered with the insulating material (12) and the region (15) of the second electrode (2) not covered with the insulating material (13) being arranged offset to one another, wherein the side of the insulating material (12) facing the second electrode (2) and the side of the insulating material (12) facing the first electrode (1) are at least partially covered with a high-resistance material (17, 18), the first electrode (1) spaced away from the region (14) being electrically conductively connected to the high-resistance material (17) and the second electrode (2) spaced away from the region (15) being electrically conductively connected to the high-resistance material (18).

8. Overvoltage protection means as claimed in one of claims 1 to 7, wherein there is an active ignition aid.

9. Overvoltage protection means as claimed in claim 8, wherein a series connection of a voltage switching device and an ignition element is connected to the two electrodes (1, 2), the sparkover voltage of the voltage switching device being below the sparkover voltage of the breakdown spark gap, and first a diversion current flowing via the ignition element when the voltage switching device responds.

10. Overvoltage protection means as claimed in claim 9, wherein as the voltage switching device there is a varistor, suppressor diode or a gas-filled voltage arrester.

11. Overvoltage protection means as claimed in claim 9 or 10, wherein the ignition element consists of a conductive plastic, a metal material or a conductive ceramic and is in mechanical contact with the second electrode (2).

12. Overvoltage protection means as claimed in one of claims 1 to 11, wherein the housing (3) is made as a metal pressure housing and has an inner insulation housing (16).